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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/152,593	09/14/1998	HIROSHI HASEGAWA	BA-22624	9416

178 7590 11/19/2004

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EXAMINER	
DIAMOND, ALAN D	

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/152,593	HASEGAWA ET AL.	
	Examiner	Art Unit	
	Alan Diamond	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 07/634,054.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Comments

1. The obviousness-type double patenting rejection over U.S. Patent 6,410,492 has been overcome by the terminal disclaimer filed November 8, 2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamitis (U.S. Patent 2,807,155) in view of Midgley, Jr et al (Re. 19,265) and Kohashi et al (JP 62-292895). JP 62-292895 is already of record on the PTO-892 mailed July 1, 2003 and is an English translation. Said English translation is referred to below.

Williamitis teaches a fluid composition for a refrigerator, wherein the fluid composition contains a refrigerant such as disclosed in Midgley, Jr et al and, as the refrigerator oil, a pentaerythritol tetraester having the chemical formula given at col. 2, line 66 (see also col. 2, lines 23-56). The tetraester may also be of dipentaerythritol or tripentaerythritol (see col. 3, lines 8-20). Midgley, Jr et al is relied upon for showing that the refrigerant can be a chlorine-free fluorocarbon (see the paragraph bridging pages 1 and 2 of Midgley, Jr et al). In the chemical formula at col. 2, line 66, and the chemical formula at col. 3, line 15, of Williamitis, the R groups can be straight or branched chain

alkyl of preferably 6 to 10 carbon atoms (see the paragraph bridging pages 1 and 2 of Williamitis). Williamitis teaches the limitations of the instant claims other than the differences which are discussed below.

Williamitis not specifically teach the presence of the instant conventional oil, the instant additive, and 0.1 to 5% by weight of an epoxy compound in the fluid composition. Kohashi et al teaches that other oils, such as paraffinic mineral oils, naphthenic mineral oils, alkylbenzene oils, and polyolefin oils can be used together with its pentaerythritol ester for refrigerating machine oils (see pages 2-3 of said English translation). Kohashi et al also teaches the addition of 0.05 to 10 wt% of a glycidyl ester to the refrigerator oil so as to suppress the corrosion of metal components of the refrigerator apparatus and stabilize the oil (see page 3, lines 12-36). Kohashi et al also teaches that additives such as antioxidants and antiwear agents can be used together with the glycidyl ester (see page 4, lines 18-19). Kohashi et al exemplifies pentaerythritol esters (see Table 1 at page 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the glycidyl ester of Kohashi et al to the refrigerator oil of Williamitis because said glycidyl ester suppresses the corrosion of metal components of the refrigerator apparatus and stabilizes the oil, as taught by Kohashi et al. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included an oil such as paraffinic mineral oil, naphthenic mineral oil, alkylbenzene oil, and polyolefin oil, and an additive such as antioxidants and antiwear agents, in the refrigerator oil of

Williamitis because these are conventional materials that can be present with the refrigerator oil, as shown by Kohashi et al.

4. Claims 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamitis in view of Midgley, Jr et al and Kohashi et al as applied to claims 1-3 and 5 above, and further in view of JP 55-155093, herein referred to as JP '093.

Williamitis in view of Midgley, Jr et al and Kohashi et al, as relied upon for the reasons recited above, teaches the limitation of claims 4 and 6-8 other than the presence of the instant phosphorus compound. JP '093 teaches that the addition of trimethyl phosphate to a pentaerythritol ester refrigerator oil helps to prevent corrosion (see the attached English abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the trimethyl phosphate additive of JP '093 in the refrigerator oil of Williamitis in view of Midgley, Jr et al and Kohashi so as to prevent corrosion, as taught by JP '093.

Response to Arguments

5. Applicant's arguments filed November 8, 2004 have been fully considered but they are not persuasive.

Applicant argues, with respect to the rejections in sections 2 and 3 of the Office action mailed May 11, 2004, that in Kohashi et al, the purpose of the addition of the glycidyl ester is to scavenge the corrosive hydrogen chloride produced by degrading flon or fluoro-chloro hydrocarbon refrigerant. Applicant argues that the refrigerant used in the instant claims is chlorine-free and that no hydrogen chloride is produced. Applicant argues that the purpose for using the glycidyl ester additive as enunciated in

Kohashi et al does not exist in the claimed invention. Applicant cites Panduit Corp. V. Dennison Mfg. and argues that there is no suggestion or reason indicated in the cited references for combining Kohashi et al with Williamitis and Midgley, Jr et al. The Examiner has considered Applicant's arguments and cited case law and does not deem them to be persuasive for the following reasons. While it is true that Kohashi et al's glycidyl ester additive will scavenge hydrogen chloride formed by decomposition of flon, the flon is not even required to be present in the composition in order to take advantage of the properties of the glycidyl ester additive. Note that the patent claim at the top of page 2 of said English translation of Kohashi et al recites a refrigerating machine oil having ester oil and the glycidyl ester additive, with no requirement that flon be present. Note in the "Effects of this Invention" section at the bottom of page 4 of said English translation, Kohashi et al teaches that "[r]efrigerating machine oils composed of a polyvalent alcohol and ester type oil and a fatty acid glycidyl ester in accordance with this invention, not only have excellent lubricating oil properties and thermal stability, but comprise refrigerating machine oils with improved stability. In other words, the combination of the refrigerating machine oil composed of the polyvalent alcohol ester and the glycidyl ester has excellent lubricating properties and thermal stability whether or not flon is present. If flon is present, the further advantage is provided of flon stability.

It is well known that HCl is not the only acid of concern that is present in refrigerating systems, and that other acids are generated due to motor burnout, and the decomposition of the oil, insulation, varnish, gaskets and adhesives (see, for example,

col. 1, lines 44-60 of Klodowski, U.S. Patent 4,923,806). Furthermore, epoxy compounds are extremely well known acid scavengers in the art for controlling acid buildup and preventing corrosion when used with ester oils in applications such as refrigeration (see col. 1, line 41 through col. 2, line 7, of Herber et al, U.S. Patent 3,723,320). In the absence of anything unexpected, a skilled artisan would expect the glycidyl ester acid additive of Kohashi et al to provide thermal stability to the ester oil of Williamitis and prevent corrosion when used with the chlorine-free refrigerant taught by Midgley, Jr et al. Accordingly, the Examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the glycidyl ester of Kohashi et al to the refrigerator oil of Williamitis because said glycidyl ester suppresses the corrosion of metal components of the refrigerator apparatus and stabilizes the oil, as taught by Kohashi et al.

Applicant argues that the refrigerants actually specified for use by Williamitis are Freon 11, Freon 12, Freon 22 (col. 2, lines 27-29), which are chlorine-type fluorocarbon refrigerants. However, this argument is not deemed to be persuasive because Williamitis not limited to its examples. Williamitis clearly teaches that "[t]he refrigerant used in the present invention preferably comprises a fluoro halo derivative of an aliphatic hydrocarbon of the character disclosed in the patent to Midgley [Jr] et al, Re. 19265". Midgley, Jr et al clearly shows that the refrigerant can be a chlorine-free fluorocarbon (see the paragraph bridging pages 1 and 2 of Midgley, Jr et al).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
November 18, 2004